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ROYAL GARDENS, KEW.

BULLETIN

OF

MISCELLANEOUS INFORMATION.

No. 22.] OCTOBER. [1888.

LIX.—COLONIAL FRUIT—(continued).

Sierra Leone.

The following is an extract from a despatch from Administrator Hay to the Secretary of State for the Colonies, dated 16th April 1888 :—

"With respect to the information required as to the fruits produced in this Settlement, I referred the question to the authorities of the Local Botanic Society, and beg to tranmsit a copy of a report and returns prepared by its honorary secretary with the approval of the Society. I venture to remark that the report and returns are of an interesting character, and trust that the resources of the Settlement thereby may become more widely known."

Notes on the fruits of Sierra Leone, prepared by Mr. Samuel Lewis, Hon. Secretary of the Local Botanical Society :—

Freetown, April 15, 1887.

With reference to your letter of the 18th of December last, No. 1,079, in which you transmitted to the Local Botanical Society through me a copy of questions asked by Mr. D. Morris, Assistant Director of the Royal Botanic Gardens at Kew, relative to the fruits of the Settlement,

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1888.

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I have the honour to state that the matter has been duly referred to the Society, which, with the object of securing a complete and accurate information on all points embraced by Mr. Morris's questions, had them published in the local press, and invited answers from any person who could give information.

* * * * * *

The chief fruits exported in a green state from Sierra Leone are pine-apples, bananas, plantains, pears, mangoes, limes, and oranges, of which pine-apples constitute the bulk of the exports to Great Britain and France. The quantity of the pines shipped to both countries may be approximately determined by the average export price, which is 10*d.* per dozen. At this rate, assuming that the 239*l.* appearing in the annexed returns for 1883 is not understated, it represents 68,792 pines as exported in that year alone. This quantity can be annually maintained and considerably increased if the trade were remunerative, and the large quantities which are produced in the Timneh country could be induced to flow abroad through the Settlement. But the loss sustained by the fruits arriving at their destination in bad condition has checked the continuity of the supply and growth of exports.

Almost the whole of the bananas, plantains, pears, mangoes, limes, and oranges grown in Sierra Leone, go to the Gambia, Goree and Senegal, whilst some pines also are exported to those places.

It will be seen from the table annexed that the principal, and indeed nearly all the fruits of Sierra Leone are in season from January to April, though some are obtainable throughout the year.

There is no export of preserved fruits, and the cocoa-nut is the only fruit of the Settlement exported in a dry state, and in that state, in which it takes the name of coprah, it is not used as fruit. But the waste of economic matter in the shape of shell, husk and fibre thrown away after separation of the kernel for coprah, and perhaps the reduction in the price of coprah during the past four or five years have stimulated the growth since last year of an export of cocoa-nuts in husk, chiefly to Europe, where the now neglected materials may be used in the manufacture of ropes and matting, and the kernel in its fresh state used as fruit.

Besides the suggestion just made relative to cocoa-nuts, it is not unworthy of record regarding the mango that its abundance and cheapness here, and the capacity which Sierra Leone has for its increased production, are conditions which point to the necessity for studying how and where it may be turned to account as an article of export, either green, to be used in the manufacture of spirits, which it is said may be profitably produced from it, or for consumption as fruit, or in a dried or preserved state. When in a fresh state, and before it is fully ripe, it is employed locally as, and is found to be a good substitute for, English apple-sauce.

Like pine-apples, the other exportable fruits above referred to may be produced in larger quantities than the present yield, but the drawbacks to their more extensive production, and to a greater investment in the fruit trade, are mainly, for the Gambia, Goree, and Senegal, countries almost destitute of fruits, the want of regular steam communication with them, and of precision in the dates of arrival and departure of the steam vessels now taking freight from Sierra Leone, and for Europe, the absence of quick transit, as well as the absence of vessels specially adapted for receiving and conveying fruit.

The export trade in two of the fruits of the Settlement is likely to gain a new impetus, viz., cashew and velvet tamarind; for the stone of

the cashew is in great demand in Germany, where it is used in confectionery, and is sold there at 9*s.* a cwt., though it is only thrown into the dust heap here. Velvet tamarind (*Dialium guineense*) is being somewhat extensively used in pharmacy in France. The knowledge of the demand for these fruits in Europe is all that is necessary to infuse activity in their cultivation, and in their export hence.

The chief fruits imported into the Settlement are green apples from England and grapes from Madeira, whilst the preserved fruits consist of apples, apricots, blackberries, cherries, peaches, pears, plums, and strawberries from Germany viâ England, and olives from France.

The dried fruits imported are almonds, currants, figs, prunes, and raisins from France.

Chief Fruits of Sierra Leone.

Local Names.	In what Months obtainable.	Local Prices.
Pine-apple	Throughout the year, but abundantly from January to June.	10*d.* per doz.
Banana	Throughout the year	8*d.* a bunch.
Cashew	January to April.	——
Cocoa-nuts	Throughout the year	6*d.* per doz.
Cucumber	December to March.	——
Guava, red	September to December	About 2*s.* per bushel.
Guava, white	September to December.	——
Lime	Throughout the year, chiefly in August	6*d.* to 8*d.* per 100.
Locust	April to June.	——
Mango	Throughout the year, but chiefly February to June.	3*d.* per doz.
Orange	Throughout the year, but chiefly August to June.	——
Papaw	Throughout the year.	——
Pear	March to June	6*d.* to 9*d.* per doz.
Plantain	Throughout the year	3*d.* to 8*d.* per bunch.
Tamarind, black or velvet.	January to April.	——

Gold Coast.

In a despatch dated 12th November 1887, addressed to the Secretary of State by Colonel White, it is stated that:—"Fruit, with the "exception of cocoa-nuts, cannot in my opinion at present be profitably "exported from the Gold Coast Colony, owing to its distance from all "markets and the want of speed of the steamers which call.

"A commission on the best means of developing the agricultural "resources of the Colony is now sitting, and I will refer the matter to "them. There is very little available knowledge of, or interest taken "in, such matters in the Colony, where officers are so constantly and "for the most part, strenuously employed, and the climate is so "enervating and sickly."

The following notes on the fruits of the Gold Coast have been prepared by the Reverend T. B. Freeman:—

Orange.—Native Fanti name *Akutu.* It grows in abundance in the Fanti districts and in the mountain regions of the interior behind Accra. The main harvest months are August and December. The culture could be greatly enlarged in a few years for shipment to England. The average market price is 3*d.* per dozen.

Pine-apple.—Fanti name *Abrobay*, Accra name *Brofongmey*. Grown in abundance all over the country. The culture could be greatly enlarged. The main harvest months are August and December, but they are largely produced all the year round. The pine is not only eaten as a fruit, but it makes excellent jam. The average market price is 1*d.* each.

Lime.—Fanti name *Ankama*, Accra name *Abonua*. Grown in great abundance. The culture could be vastly increased. The main harvest months are August and December. The average market value is about from 1*s.* to 1*s.* 6*d.* per bushel.

Guava.—Grows wild in moist situations all along the coast and for some miles inland, and bears abundantly, but it does not seem to be indigenous, as it has no native name. The harvest months are July and August and November and December. Local market value about 9*d.* per bushel. It makes excellent jam.

Ground Nut.—Fanti name, *Inkatsi*, Accra name, *Inkatia*. This is a fruit of considerable commercial importance, and was largely cultivated for the European market 20 or 30 years ago for the extraction of its oil, and for other purposes. The harvest months are October and November. It could be grown to any extent in the plains near the coast. Market value, about 3*d.* per lb.

Custard Apple, *Sour Sop*, and *Sweet Sop.*—These three are cultivated for private use, but they have no commercial value. Accra name, *Alugun Tongone*.

Papaw.—Fanti name, *Brofiri*, Accra name, *Appapa*. This is cultivated extensively throughout the country, and used generally as a fruit, but in an unripe state it is used on the tables of European residents as a vegetable. It bears fruit all the year round. Average market value, about 1*d.* each.

Pumpkin.—Fanti name, *Effiri*, Accra name, *Sacraibuntey*. Grows abundantly in all parts of the country. It is of good flavour, can be used either as a fruit or vegetable, and would, under certain conditions, bear shipment to Europe. The harvest months are August and December. Average market value 3*d.* each.

Plantain.—Fanti *Boradzi*, Accra, *Amada* and *Banana.*—Fanti, *Kwadu*, Accra, *Aquadoo*. These are largely cultivated, and bear all the year round. They have no commercial value here as fruits.

Lagos.

The following is an extract from a despatch from Mr. F. Evans, C.M.G., Acting Administrator of Lagos, to the Secretary of State, dated 27th May, 1887 :—

" I have the honour to transmit to you the only information I have been able to gather concerning the fruits of the Colony, and, meagre as this is, I would ask you to believe that the difficulty experienced in its collection is the sole cause of the delay which has occurred in replying to the circular despatch.

" There is not sufficient fruit of any kind grown in or near Lagos to enable exportation, for trade purposes, to take place, and what is grown is mostly of an inferior quality, no attention being paid to its cultivation, and although limes, sweet oranges and tamarinds might possibly be extensively cultivated and preserved for exportation, the length of the voyage between here and Europe precludes the possibility of the shipment of fresh fruit."

The names of the common fruits of Lagos are :—Banana and Plantain, Pine-apple, Mango, Cashew, Orange and Lime, Bread-fruit, Pomegranate, Sour Sop, Custard Apple, Avocado Pear, Tamarind, Granadilla, Papaw, Water Melon.

With the exception of the Mango and Cashew, the above fruits are obtainable throughout the year. They are not suitable for exportation in a fresh state, and there are no wholesale prices for quotation.

Fruits grown in the Colony are exported either in a fresh or preserved state.

Fruits grown in the Colony are capable of being produced in much larger quantities, but the natives do not understand the cultivation or the method of preserving, and consequently there is no inducement among the local traders to open up or extend a trade in fresh or preserved fruits.

Natal.

The information respecting the fruits of Natal, supplied by the Government of the Colony, has been prepared by Mr. J. Medley Wood, A.L.S., Curator of the Durban Botanical Gardens; by Dr. P. C. Sutherland, and by Mr. J. T. Edwards, a nurseryman and Member of the Committee of the Pietermaritzburg Botanic Society.

Mr. Medley Wood's Report deals chiefly with the fruits grown in the coast districts of the Colony :—

Botanic Gardens, Durban, July 7th, 1887.

I beg to enclose, according to your request, a list of the chief fruits grown in the coast districts of the Colony, with the months in which they are obtainable. I have so very little acquaintance with the uplands or the fruits that are grown there that I can deal with the coast districts only.

As to the quantities available for export, I am quite unable to give reliable information, and can only say that at present, at any rate, the quantity produced is not by any means large, but may be very materially increased if the industry be found to be remunerative.

At present oranges, naatjes, bananas, and pine-apples are exported in a fresh state, chiefly to Cape Colony, Free State, and Transvaal, and in smaller quantities to Europe ; but as this is purely a commercial matter, I do not feel myself in a position to give information of any value upon it.

The whole of the fruits enumerated in the annexed list are capable of being produced in very much larger quantities than at present, if growers can only be assured of a remunerative market for their produce.

All that (in my opinion) is necessary to develop a fruit trade from the Colony is certainty of a market ; facilities for transport, such as cool chambers on board the steamers, &c. ; knowledge of the best mode of packing, and care on the part of the steamship companies to prevent such enormous losses from pilfering in transit as was experienced in the trial shipment sent home by the Commissioners of the late Colonial and Indian Exhibition.

The careful culture of fruit has not as yet received much attention in the Colony, but if the industry were found to be fairly remunerative, I have no doubt whatever that the size and quality of the fruit grown would soon be materially improved.

So far as I am aware, the only fruits imported into the Colony in a fresh state are grapes from the Cape Colony; as to the quantity imported, I have no means of obtaining information.

The importation of preserved fruits is a matter about which I know nothing.

I may say, in conclusion, that with a view of doing something to encourage the growth of fruit in the Colony, we have imported plants of the best kinds of mango and shaddock from India, and orange, naatje, and lemon from Florida, and I am expecting also grafted plants of the best kinds of guavas from India, and we shall at all times be willing to procure seeds or plants of any kind of fruit which it may be thought desirable to introduce into the Colony.

LIST of the CHIEF FRUITS GROWN on the COAST LANDS of NATAL.

Popular Name.	Scientific Name.	When in Season.	Remarks.
Orange	*Citrus Aurantium*	May to December	Plentiful.
Naatje	„ *nobilis*	„ „	„
Mandarin Orange	„ „ var.	„ „	„
Lemon	„ *Medica* var. *Limonium.*	„ „	„
Shaddock	„ *decumana*	„ „	Scarce.
Seville Orange	„ *Aurantium*	„ „	„
Lime	„ *Medica* var. *acida*	„ „	„
Banana	*Musa sapientum*	October to July	Plentiful.
Pine-apple	*Ananas sativa*	December to March	„
Grape	*Vitis vinifera*	February	Scarce.
Catawba Grape	„ „	„	„
Amatungulu	*Carissa grandiflora*	January to May	Plentiful.
Guava	*Psidium Guava*	April to July	„
China Guava	„ *pyriferum*	„ „	„
Mountain Guava	„ *Cattleianum*	„ „	Scarce.
Peach	*Amygdalus persica*	December to February	Plentiful.
Mango	*Mangifera indica*	„ March	„
Cape Gooseberry	*Physalis pubescens*	June and July	„
Loquat	*Eriobotrya japonica*	July to September	„
Grenadilla	*Passiflora edulis*	November to May	„
Brazil Cherry	*Eugenia brasiliensis.*		
Papaw	*Carica Papaya*	October to May	„
Avacado Pear	*Persea gratissima*		Scarce.
Strawberry	*Fragaria vesca*	November and December	„
Raspberry	*Rubus Idæus*	„ „	„
Mulberry	*Morus sp.*	„ „	Plentiful.
Litchi	*Nephelium litchi*	„ „	Scarce.
Sweet Sop	*Anona squamosa*	—	„
Custard Apple	„ *reticulata*	—	„

J. MEDLEY WOOD.

Dr. Sutherland's Report is as follows :—

9th July 1887.

Referring to your communication enclosing copy of a letter dated the 14th August 1886 from the Royal Gardens, Kew, together with a series of questions touching the fruit products of this colony, I have the honour to subjoin all the information I have been able to collect.

The chief fruits grown in the colony, in order of their importance, are :—

1. Pine-apple (*Ananas sativa*).
2. Banana (*Musa sapientum*).
3. Plantain (*Musa sapientum*).
4. Orange (*Citrus aurantium*), in great variety.
5. Naatje (*Citrus nobilis*).
6. Lime (*Citrus Medica* var. *acida*).
7. Lemon (*Citrus Medica* var. *Limonum*).
8. Shaddock (*Citrus decumana*).
9. Citron (*Citrus Medica*).
10. Peach (*Amygdalus persica*), in variety.
11. Apple (*Pyrus malus*), in great variety.
12. Quince (*Cydonia vulgaris*).
13. Apricot (*Prunus armeniaca*).
14. Fig (*Ficus Carica*).
15. Pear (*Pyrus communis*).
16. Grenadilla (*Passiflora edulis*).
17. Loquat (*Eriobotrya japonica*).
18. Grape (*Vitis vinifera*), Cape varieties and Catawba.
19. Strawberry (*Fragaria vesca*).
20. Cape gooseberry (*Physalis pubescens*).
21. Amatungulu (*Carissa grandiflora*).
22. Tamarind (*Tamarindus indica*).
23. Mango (*Mangifera indica*).
24. Avocada pear (*Persea gratissima*).

Pine-apples, generally a coast product, but grown up to 2,500 feet in sheltered localities, are available from January to August—in exceptional cases, the whole year. Supply equal to any demand. Prices 1*d.* to 3*d.* each, according to season and quality.

Bananas and *plantains* produced on the coast, and up to elevations of 1,500 feet are available generally throughout the whole year. If there were a demand the supply would be unlimited. Prices vary from one to two shillings a bunch, according to size and quality.

Oranges, limes, &c. are available from April to August. Grown all over the Colony the supply would meet any reasonable demand. The prices vary according to seasons, being lowest between May and August, and highest during the scarcity. Immense quantities are lost annually for want of a market. Marmalade and lime-juice may be prepared in unlimited quantity. This industry is extending rapidly, and will soon be sensibly realised.

Peaches are universally grown all over the Colony, certain varieties being adapted for the warmer coast districts, and others of the hardier and better-flavoured varieties more suitable for the colder and more elevated districts. They are available from December to February. The supply is far in excess of the demand, and can be pushed to any extent if there were a market. Fully three-fourths of the crop is annually lost from want of a market and the perishable nature of the fruit. Much is preserved for local use. A price, under the circumstances, can hardly be given. When the fruit is offered for sale it is merely to cover cost of gathering and carriage to market.

Apples, like peaches, are grown all over the Colony, the hardier varities being in the upper districts. The supply is far in excess of the demand, there being no market for the produce of every farm and garden. The fruit is in season from December to January, and prices are such as cover cost of gathering and carriage to market, 1*s.* 6*d.* to 3*s.* a hundred, according to size and quality.

Quinces, like apples, thrive best in the upper districts of the Colony. They are in season in January, earlier or later according to situation; cultivation capable of extension unlimitedly if there were a market. The fruit is often preserved but seldom sold, there being no demand.

Apricots come into season in November. Any demand could be met by large supplies. The price, 2*s.* and 3*s.* per 100 for first supplies, soon falls owing to the limited market.

Figs are ready in January, and continue in season for two or three months. Production may be extended indefinitely. Prices just sufficient to cover cost of gathering and carriage to market.

Pears are in season in February and can be produced to any extent. Prices when sold merely nominal.

Grenadillas are in season from November to May. Its growth is capable of indefinite extension. Prices vary according to season, 1*s.* 6*d.* a bushel being a common quotation, and insufficient to cover cost of gathering and carriage.

Loquats are in season in May; capable of extension indefinitely; prices nominal, merely sufficient to cover cost of carriage.

Grapes come into season in December, and continue for two or three months. The price varies from 6*d.* to 1*s.* per lb., according to variety, quality, and season, the Cape varieties being the most expensive. The Catawba, owing to general hardiness and freedom from disease, is capable of extension without limit. A valuable preserve is being made from this grape which threatens to take the place of black currant jelly.

Strawberry.—This valuable fruit is coming into general cultivation, and may be extended on any scale. It is in season from December to April. Prices vary according to season, 6*d.* a pint being the minimum.

Cape gooseberry.—This valuable esculent is not cultivated, being permitted to occupy fences and fallow lands in native use. It might be taken into cultivation, and by this means could be extended. The natives enjoy the entire trade, collecting the fruit in their own way and at their convenience, selling it to Europeans in town or country. The price is generally about 4*s.* 6*d.* a bushel. According to situation as to coast or upper districts, the fruit is in season from February to May. This fruit is made into a jam, which is hardly ever known to ferment.

Amatungulu.—This is entirely a coast plant, and the fruit is in season from January to May. As a rule the plant has not been cultivated, but it admits of ready extension by cultivation, and thereby its productiveness is greatly increased. The natives collect the fruit from the plants in their wild state, and dispose of it to Europeans; the price, therefore, varies from a mere nominal sum to anything they can get.

Tamarind.—This has been tried, but on a limited scale. The fruit ripens in May, but there is scarce any demand for it.

Mangoes can be grown in abundance, and come into season in May, but there is no demand for them.

Avocada pear can also be grown in abundance, and comes into season in March, but there is no demand for the fruit.

In 1886 the dried and preserved fruits exported were entered of the value of 422*l.*, but the sorts are not enumerated. The green fruit

exported, chiefly bananas, were entered of the value of 2,439*l.* Both kinds, viz., the preserved fruits and the green or fresh, were shipped to the Cape Colony.

All the above-mentioned fruits are capable of being produced in much larger quantities. The absence of a market has deterred the farming community from pursuing this industry beyond their own special and local requirements. The steps, in my estimation, necessary to develop a fruit trade are first the preservation of the fruit either by judiciously drying it or by preserving it in tins. Messrs. Jameson and Co., Durban; Hulett, Nonoti; Ladds, Mooi River; and Blaker, Estcourt, have made a good start in that direction, and others will follow their example. Local men complain that the tariffs of neighbouring states militate seriously against the use therein of Natal preserved or green fruits, import duty being so high as to prove prohibitive. This, no doubt, is the case (as the question would be viewed in the light of free trade) omitting the consideration of the question whether the industries of these states do not stand in need of some such protection as is secured by a high import duty. The trade with the mother country is seriously menaced by the long ocean voyage, and the risks of damage to green fruit, however well it may be prepared before embarkation. In the case of preserved fruits, the new industry here will have to cope with the same industry established in other colonies and states for many years enjoying a reputation which cannot easily be set aside.

Dried fruits, unspecified, imported from the United Kingdom, 80,000 lbs.; value 1,252*l.* From Bombay, Calcutta, and Madras, 195,867 lbs.; value 612*l.* Mozambique, 608 lbs.; value 8*l.* America, United States, 850 lbs.; value 14*l.* Currants and raisins from the United Kingdom, 183,828 lbs.; value 2,541*l.* From Cape Colony, 34,548 lbs.; value 346*l.* Preserved fruit from United Kingdom, unspecified, 26,378 lbs.; value 653*l.* Calcutta, 180 lbs.; value not specified. Cape Colony, 38 lbs.; value 8*l.* Fresh fruit:—Cape Colony, quantity not specified, value 180*l.* Mauritius, quantity not specified, value 10*l.* The total of imported fruit, preserved, dried, and fresh, is nearly 6,000*l.* per annum, while the exports are not quite half that sum.

In certain conditions of the weather favourable to the development of insect life, fruit is liable to suffer much, the only remedy for which is the maintenance of the trees in the most vigorous possible condition, giving proper heed to the due supply of manure and moisture. Violent hailstorms occasionally do much damage, but as they are very local it rarely happens that a district suffers; of two plantations a quarter of a mile apart, one may escape entirely, while the other may have been entirely denuded of its fruit.

Regarding the institution of a fruit trade with the mother country, or with the neighbouring states, it appears to me that the first object should be to remove the necessity there is for importing fruit in a preserved state or dried. As I have already observed, steps have been taken towards this end. When imports cease, no doubt there will be a surplus of preserved and dried fruit which may with perfect safety be placed upon the markets at home, or in other colonies or states where there may be a demand for the same. Much experience and unwearied care are necessary in the conduct of the export of fresh fruit. Facilities of shipment are, it is true, so great now as to lessen the time the fruit requires to be at sea considerably below the period required fifty years ago for the passage from the Mediterranean or the Azores. It should, however, not be forgotten that the latter slow passage was made by a sailing vessel in a cold season of a temperate climate, while the modern quick passage

is made through the tropics in a steamer of great heat. Preserved and dried fruits suffer comparatively little from such heat as would be totally destructive to fresh fruit. Much no doubt may be done by careful packing and the maintenance of the lowest temperature circumstances may permit; but these conditions may nvolve expenses that will exceed the value of the fruit when exposed for sale in the home markets.

P. C. SUTHERLAND.

The following Report has been prepared by Mr. J. T. Edwards relative to the cultivation and production of fruit in Natal:—

Pietermaritzburg, 20th January, 1888.

IN accordance with the request of his Excellency the Governor, I have the honour of furnishing you with the following particulars respecting the cultivation of fruit in this Colony:—

The fruit-bearing area in Natal may be divided into three districts, viz., Coastland, Midland, and Upland: these districts being defined by the varying altitude.

The Coast district embraces a belt of country extending on an average from 20 to 30 miles inland. In this district nearly all the known tropical and semi-tropical fruits thrive. Those at present most extensively cultivated are the pine-apple, banana, orange, mango, and guava. Fresh fruit of the two former are exported largely to the Cape Colony ports, also in smaller quantities to the Transvaal gold fields and to the Orange Free State. There are two varieties of the pine-apple grown, viz., the Jamaica (spiny-leaved) and the smooth-leaved Cayenne. Both varieties do well, but the fruit of the latter is especially fine, weighing in many instances from 4 lb. to 6 lb. each. The wholesale price of the spiny-leaved kind is from 3*d.* to 6*d.* per dozen, and of the smooth-leaved from 3*d.* to 1*s.* each. Although considerable quantities of these fruits, both in a fresh and preserved state, are exported annually, the growth at present is greatly in excess of the demand. All the varieties of the orange do well, and during late years the plantations have been greatly increased. The yield of fruit is enormous, some trees bearing no less than 4,000 oranges. The variety most esteemed for its fine flavour and extraordinary fruitfulness is the naatje, or mandarin orange. The wholesale price of the orange is from 6*d.* to 1*s.* 6*d.* per 100, and of the naatje from 1*s.* to 2*s.* per 100. The Coast oranges are in season from May until September. Of the other fruits which thrive in this district may be enumerated the lime, shaddock, lemon, papaw, loquat, grenadilla, Brazillian cherry, Avocada pear, mulberry, pomegranate, litchi, sweet sop, custard apple, &c. Also the Cape gooseberry, and amatungulu, two indigenous fruits which, when preserved either as jam or bottled fresh, are much valued.

The Midland district is situated at about 2,000 to 3,000 feet above sea level, and the principal fruits grown are the apricot, peach, pear, apple, and orange, and of small fruits, the strawberry. The apricot and peach are grown extensively throughout the district, and the yield of fruit is most prolific. The local markets are much too small for the consumption of this fruit, and many tons are annually allowed to waste or are fed to pigs. The leading varieties of the apricot grown in the Colony are the Large Early, Moorpark, and Turkey. The varieties ripen in the order named; the Large Early about the first week in December, and the Turkey early in January. The wholesale price for apricots this season has been from 3*d.* to 6*d.* per 100. The varieties of peaches grown are very numerous, but those most in favour are the Alexander, Barrington, Grosse Mignon, Precoce, Royal George, Noblesse, Early

White, and Walker's Large Yellow. The white varieties of the peach ripen in December, the red varieties in January, and the yellow ones early in February. Nectarines do fairly well, but are not grown so extensively as the peach. The best varieties are Stanwick, Elruge, Newington Early, and Pitmaston Orange. The wholesale price for peaches is from 3*d.* to 1*s.* per 100, according to quality, and of nectarines, 2*s.* to 3*s.* per 100. Pears have not been planted very extensively until within the last six or seven years. They do well throughout this and the Upland district, the trees coming into profitable bearing from 8 to 10 years old, or in about half the time required for their maturation in Great Britain. The following varieties are amongst the best yet grown in the Colony, viz., Cape Saffron, Burgamot, Jargonelle, Beurre Diel, Louise Bon de Jersey, Bon Chretian, Beurre de Aumanlis, &c. Pears are in season from January until March. Several shipments of this fruit despatched last January arrived in London in good order, and it is to be hoped that an increased and remunerative trade may be done with the home market. The wholesale price of pears is from 1*s.* 6*d.* to 5*s.* per 100. Apples are grown largely in this district, but the finest fruit comes from the Uplands. Considerable disappointment has been experienced in the Midlands on account of the susceptibility of some varieties to the attack of the American blight (*Schizoneura lanigera*), this pest having caused much damage to many orchards. Much experience has, however, been gained, with the result that greater care is now taken in the selection of blight-resisting varieties, also in the use of healthier stocks for the propagation of young trees, than was the practice formerly. The following are the most approved varieties: American Lady, Blenheim Orange, Bedfordshire Foundling, Beauty of Kent, Dutch Tulis, Pistorius' Seedling, Stermer Pippin, Red Quarrendon, Yorkshire Greening, and Royal Pearmain. Apples are in season from January until March. The wholesale price is from 6*d.* to 1*s.* 6*d.* per 100. Vines do fairly well, but the choice varieties require protection from the rain during the ripening season. An American variety, known here as the Catawba, thrives most luxuriantly, and produces enormous crops of fruit without the aid of the slightest shelter. A very agreeable wine is being manufactured from the fruit, the production of which can be increased to any extent. The market value of this grape is from 1*d.* to 2*d.* per lb. The colony is indebted to Sir Theophilus Shepstone for the introduction of this valuable plant. Figs do well in the neighbourhood of Maritzburg, and if attention were given to the drying of this fruit a valuable increase might be made to our exports. The orange and naatje do well, and as the time of ripening is somewhat later than the coast, the supply from this colony might extend from May until November. Strawberries grow with perfect luxuriance, and produce their fruit from September until March. The principal other fruits grown in this district are almonds, loquats, marabella plum, guavas, mulberries, quince, lemons, limes, pomegranate, medlar, walnut, Spanish chestnut, raspberries, &c.

The Upland district is from 4,000 to 5,000 feet above the sea level. Here all the hardy European and other fruits thrive, including the gooseberry, currant, cherry, greengage, and other plums, damson, &c.

It will be seen from the foregoing remarks, and from the list appended hereto, that the fruit-growing capabilities of the colony are very great, and that the production of tropical, semi-tropical, and hardy fruits could be developed to an almost unlimited extent. The local markets, however, are already too small for the supply, and it is of the utmost importance that markets outside the colony should be secured for the sale of our

surplus fruit. The trade in preserved fruits, with the rapidly increasing English population in the Transvaal, is being seriously retarded by the 40 per cent. duties imposed by our Dutch neighbours.

To enable us to open up a successful trade with the mother country every effort should be made to induce the steamship companies to provide refrigerators in their ships, and to fit up suitable compartments for the storage of fruit during the lengthy voyage to England; but perhaps the most important matter is to urge a reduction of the high freight charges, which at present are quite prohibitive in their effect. With these improvements effected it is reasonable to anticipate that a large trade might be done with the home markets in fresh fruit of the orange, naatje, pine-apple, pear, mango, banana, &c.

Although difficulties may attend the exportation of fresh fruit, these disadvantages cannot affect the development of an export trade in preserved and dried fruits. Considerable attention has been devoted to this trade during the past few years, and the dried fruits prepared by Messrs. Blaker & Cautherley, of Estcourt, are equal, if not superior, to the best imported samples. The same remarks also apply to the excellent jams, jellies, marmalades, candied and bottled fruits manufactured by Messrs. Jameson & Co., Durban, Mr. Ladds, Mooi River, and Mr. Procter of Maritzburg.

In regard to the imports of fruit into the colony, these are mostly preserved fruits, jams, &c., and come almost exclusively from Great Britain, excepting dried fruits, which are imported from America. It is, however, satisfactory to note that the consumption of imported jams in the colony is rapidly decreasing, on account of the superior quality of the colonial manufacture, and from the fact that the prices of both articles are in most cases about equal. The recent increase in the duty imposed on imported jams and other preserved fruits may cause a slight decrease in the revenue, but I venture to say that this will be made up for by the increase on tin and other articles used in the preserving business; and it ought also to be remembered that by the encouragement of this industry a market is created for our sugar.

List of the Chief Fruits grown in the Colony of Natal.

Popular Name.	When in Season.	Wholesale Price.	Quantity.
Apricot	December and January	3*d.* to 6*d.* per 100	Very plentiful.
Avocada Pear	February	—	Scarce.
Apple, 40 varieties	January to March	6*d.* to 1*s.* 6*d.* per 100	Very plentiful.
Almond	March	—	Scarce.
Amatungulu	January to May	1*d.* to 1½*d.* per lb.	Plentiful.
Brambles	December to February	—	—
Brazilian Cherry	—	—	—
Banana	October to July	1*s.* per 100	Plentiful.
Citron	May to January	3*s.* 6*d.* per 100	Scarce.
Cherries, 6 vars.	January	—	„
Currants	December	—	„
Custard Apple	—	—	„
Cape Gooseberry	May to August	½*d.* to 1*d.* per lb.	Plentiful.

Popular Name.	When in Season.	Wholesale Price.	Quantity.
Catawba Grape	January to March	1*d.* to 2*d.* per lb.	Very plentiful.
China Guava	April to August	1*d.* to 3*d.* „	Plentiful.
Date	—	—	—
Dingaan Apricot	November to January	½*d.* to 1*d.* per lb.	Plentiful.
Fig	„ „	—	„
Guava (large)	April to August	1*d.* per lb.	„
Gooseberries	November and December	—	Scarce.
Grenadilla	November to May	6*d.* per 100	Plentiful.
Grapes	January to April	3*d.* to 9*d.* per lb.	—
Lemon	May to January	6*d.* to 1*s.* per 100	Plentiful.
Lime	„ „	2*s.* to 3*s.* „	—
Loquat	July to September	½*d.* to 1*d.* per lb.	Very plentiful.
Litchi	November and December	—	Scarce.
Melons	November to May	—	—
Medlar	April to May	—	Scarce.
Mulberry	September and October	½*d.* per lb.	Very plentiful.
Mango	December to March	3*d.* to 6*d.* per doz.	Plentiful.
Marabella Plum	October	3*d.* to 6*d.* per lb.	„
Mandarin Orange	May to December	1*s.* to 2*s.* per 100	Very plentiful.
Naatje	„ „	„ „	„ „
Nectarine	December and January	2*s.* to 3*s.* per 100	—
Orange	May to December	6*d.* to 1*s.* 6*d.* per 100	Very plentiful.
Pine-apple	December to March	3*d.* to 6*d.* per doz.	„ „
Papaw	October to May	—	Plentiful.
Pomegranate	March and April	—	„
Plantain	October to July	9*d.* per 100	„
Plum	January	—	Scarce.
Peach	December to February	3*d.* to 1*s.* per 100	Very plentiful.
Pear	January to March	1*s.* 6*d.* to 5*s.* per 100	„ „
Quince	„ „	1*s.* 6*d.* per 100	„ „
Raspberry	November to January	3*d.* per lb.	—
Rose Apple	—	—	—
Strawberry	September to April	3*d.* per lb.	Plentiful.
Shaddock	May to December	—	—
Sweet Sop	—	—	—
Seville Orange	May to December	—	Scarce.
Walnut	February to April	—	—

JOHN T. EDWARDS.

Pietermaritzburg, 20th January, 1888.

Malta.

The inquiry into the fruits of Malta was entrusted by the Government to a special board. For this board the following exhaustive Report has been prepared by Professor Gavino Gulia, M.D., Director of the Botanic Gardens:—

The Maltese islands have been from time immemorial celebrated for their fertility. The spikes of corn on ancient Maltese coins denote the fecundity of Malta, the agricultural produce of which has often been praised by Roman writers. Rich and very productive plantations which covered this country were destroyed by the Saracens who took possession of these islands (A.D. 870–1090). It was in the 15th century that our countrymen began to repair the great damage thus caused by these enemies of Christendom and civilization. Unluckily, afterwards the cultivation of cotton and wheat, and in modern times, that of potatoes, which to our husbandmen seemed more profitable, was the cause of their putting aside the planting of trees. The extensive plantations were no more cared for, the trees were felled for timber to make room for other economical products,—a fact which is greatly to be regretted, for, owing to its excellent climate and fertile soil, trees and shrubs of different kind grow in Malta wonderfully and produce fruit, which being of an exquisite sort, would well repay exportation. It is desirable that the Agrarian Society of Malta and the wealthy proprietors of lands should do their utmost to have these islands once more covered with productive plantations, giving preference to the olive, the almond, the vine, and orange trees.

The long felt need of water supply in rural districts has lately, fortunately, been a subject of careful research. The water supply of these islands is derived from rainfall, part of which is directly absorbed by plants, part is re-evaporated, part runs into the sea through numerous ravines, and part sinks into the soil and occupies natural reservoirs, or runs between the strata that form the geological structure of the Maltese group. By digging deep wells a considerable amount of water has already been obtained. By the laws lately enacted our ground tillers will no more depend simply on the rainfall, as a reasonable supply of water will be pretty equally distributed to all parts of the island. In a place like Malta, subject to droughts from periodical want of rain, tanks are indispensable to the agriculturist; it would therefore be advisable to force, by law, landlords to dig a tank in each field, the dimensions of which to be proportionate to the extension of the field itself. With the view of encouraging agriculture, prizes for the best plantations should be awarded to farmers; and whilst an easy way of obtaining young trees is afforded them, the expense of obtaining water for irrigation should be as moderate as possible.

The art of manuring is very little understood by our farmer, who chiefly uses rotten animal and vegetable manures after having exhaled their best constituent parts whilst lying in a corner of his field. He knows nothing of liquid manure, "which" as Professor Lindley remarks, "works the wonder, and operates like the overflow of the Nile or the "Indus." The large quantity of nightsoil, which is now lost in the sea, would become a most valuable manure to our gardeners were they taught how to employ it properly. Owing to the unchanging habits of our country-people, the Maltese farmer does not differ greatly from his ancestors. Very little, if any, novelty has been introduced into the old farming customs of Malta. Owing to the want of sound knowledge of horticulture and of proper agricultural implements, the

work of our farmers is laborious, tedious, expensive, and often unsuccessful. As a modern writer remarks, "farming in Malta and "Gozo is a battle and victory of labour. The 144 square miles "comprised within the insular area are partly barren rock, and in "many respects a geographical riddle. Cultivation has asserted its "sway over 54,716 acres, the remainder being sterile rocks." It is to be hoped that a large portion of the waste open spaces some day or other will be brought under cultivation, that the primitive implements of agriculture still in use will be superseded by proper machinery suitable for our soil, and that, as books for our farmers are useless, lectures on horticulture will be given them in each casal, with the view of teaching them how to improve their old methods of cultivation and lead them to the discovery of better modes. It would be then possible to introduce and largely cultivate many exotic trees and shrubs, bearing excellent fruit both for the home market and for exportation ; and to improve at the same time the products of those species which are now more or less successfully grown.

Wild Fruits.

Under this term we include the *Rubus discolor*, or common bramble called *gholliek* by the Maltese, plentiful both in Malta and Gozo. The small acid drupes are grateful to most palates. Our ancestors used to make of them jams, tarts, and a syrup which, being sub-acid and cooling, was recommended to allay the heat and thirst of patients suffering from fever. The fig tree *Ficus Carica* (tîn salvagg), is also a native of these islands. The wild variety produces small and delicate fruits. As many varieties of this tree have been introduced to Malta from abroad, we think proper to include them among the cultivated species. Of the olive, the wild variety of which is also a native of these islands, we shall speak hereafter, and also of the pear, a variety of which grows wild in several gullies of Malta. Also indigenous is the Azarole hawthorn, *Crataegus Azarolus*, called *ghanzalor* by the Maltese, the fruit of which, yellow or red, has an agreeable taste and is by some much esteemed for making tarts. The fruit of the common hawthorn, *Crataegus monogyna*, is very small, and only eaten by children and birds. It is known under the name of *zgharun*. The *Mespilus germanica*, which used to abound in several ravines, especially in the neighbourhood of the Boschetto, belongs now only to the flora of Gozo, where it grows seemingly wild among bushes. It is called *pomm el lip*. The fruit of the wild variety is middle-sized and worthless. The medlar is cultivated in some gardens, where it produces a fruit which, like that of the *Sorbus domestica*, is eaten in a state of incipient decay. *Punica Granatum* and *Ceratonia siliqua* belong to the Flora of these islands, so does *Olea europæa*.

We think that *Ceratonia* should be more extensively cultivated for the sake of the abundant Carobs it produces, called *harrub*, which are eaten by the poorer classes, especially in times of dearth, and form a nourishing food for all sorts of cattle. A very considerable quantity is consumed yearly by horses, it is, therefore, largely imported from Sicily and Cyprus, the quantity of pods produced in Malta being insufficient for this purpose. The Malta Carobs are sold from 2*s*. 6*d*. to 5*s*. per cwt. The Carob tree does not require any particular culture ; it is slow in growing and lives many ages, especially if care be taken to screen it from the cold northern winds which visit us during winter, by planting the young trees on the northern sides of the ravines.

It has been thought best to speak of pomegranate and olive trees, both indigenous, in the section of cultivated trees, the fruit of the wild varieties being worthless.

Cultivated species.

Our soil suits admirably the palatable Peruvian Cherimoyn, *Anona cherimolia*, known under the name of *puma cannella*, which is sparingly grown in some gardens, and the Sweet Sop, *Anona squamosa*, called here *pumacanella ta lixandra*, cultivated only as a curiosity.

Oranges and lemons: If any one were to visit a Maltese garden in January where orange and lemon trees are carefully cultivated he would come to the conclusion that the Hesperides' garden could not have been more beautiful. Oranges and lemons are grown with wonderful success in the central parts of Malta. The highest qualities grow in casals Lia and Musta and their neighbourhood.

We arrange the species of the Citrus tribe grown here into three sections, and we chiefly specify those cultivated for the home market and for exportation thus:—(*a*) Bitter Oranges (*laring kares*), Sweet Oranges (*lumi laring*, *laring comuni*, *laring ta Malta*); (*b*) Mandarin Oranges (*mandolina*); (*c*) Lemons: Citrons (*xcomb*), Sweet limes (*lumi helu*) and Common lemons (*lumi kares*). Seville or Bitter Oranges, *Citrus Aurantium* (the laring kares of the Maltese), are chiefly cultivated for their flowers, from which orange-flower water is obtained by distillation, and for the rind of their fruit, from which marmalade is made. The pulp of the fruit is acid and bitter, and is used by some in lieu of lemons. Bitter oranges are sold at 1*d.* to 2*d.* per dozen. Several varieties are grown, the principal of which are the following: (*a*) Fruit very large with a smooth rind; (*b*) fruit, typical, purplish, with tubercled or wrinkled thick rind; (*c*) fruit of a pale orange colour, with wrinkled rind, pulp sweetish and slightly bitter. Sweet Oranges, *Citrus Aurantium* (laring comuni), are very extensively cultivated and fruit very freely. Malta oranges, being long keepers, and having a very delicate taste, are exported in considerable quantities to distant countries. There are many varieties, of which we deem proper to mention the following: (1) The flat-fruited orange, *laring chatt*, is sparingly cultivated and is much esteemed. Its fruit is large, and the pulp rich in sweet juice. Sometimes the rind is thickish, the pulp not very rich, whilst the seeds are often numerous; (2) Thick-rinded orange, *laring tal kexra hoxna:* Fruit round, rind very thick, juice not abundant nor highly flavoured; (3) China orange, *laring helu* or *lumi laring:* Fruit round, rind thin, yellowish, seeds few or wanting, juice very sugary. It is much esteemed in December and January, when the other kinds are still very sour. It is not a good keeper, and is chiefly cultivated for the home market. The China orange imported from Barbary is sometimes superior in taste to our own; (4) Lemon-formed orange, *xcompa laringia:* Fruit oblong, having the shape of a lemon, and the colour and taste of an orange. It is grown in some gardens as a curiosity, and is very seldom met with in the market; (5) The blood orange, known as laring ta demm (*Citrus Aurantium*, var. *melitense*): There are several sub-varieties, all of good quality, much esteemed both at home and abroad. At maturity the peel is red as blood, the pulp is partially or wholly of a deep red colour, being juicy and delicate, sometimes it is only striped with purplish red. Not being very extensively cultivated, it is exported in small quantities. It finds a ready market at home, realising from 4*d.* to 8*d.* the dozen;

(6) The egg-shaped or oblong orange, *laring tauuali*, forms a very lucrative production for the Maltese gardener: Fruit large, oblong, rind thickish, pulp containing an agreeable juice, seeds few. It is the most perfect of our oranges, and really forms a handsome dessert fruit. It is extensively grown for export, and sold from 4*d.* to 1*s.* 3*d.* per dozen; (7) The fruit of the common orange of Malta typically is round, slightly sub-compressed, smooth, of a golden colour, with a thin rind adhering to the pulp, which is full of a sub-acid pleasant yellow juice. The tree is vigorous, long lived, sometimes very high, covered all over with lichens; the leaves are a deep green colour; it is the most abundant bearer. The fruit is sold from 2*d.* to 5*d.* the dozen, according to size, which varies much.

The pear-shaped orange is rather rare, and seldom found in markets, being but a poor bearer; fruit exquisite.

We believe that the *Citrus Aurantium*, var. *mandarinum*, of Risso (*Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environ de Nice et des Alpes maritimes*, Tom. I., p. 378), the *Citrus nobilis*, of Loureiro (*Flora Cochinchinensis*, p. 466), and the *Citrus deliciosa* of Tenore (*Catalogo delle piante che si coltivano nel R. orto botanico di Napoli*, p. 81), are varieties of but one and the same species, for which we prefer the name of *Citrus nobilis*, by which it is commonly known to botanists. It is called *mandolina*, and is extensively grown, and indeed very productive. The fruit is generally cut off with a few leaves attached; it is reddish outside and inside, having a very delicate juice. There are two distinct varieties: (*a*) fruit round, small, rind adhering to the pulp, juice very sweet; (*b*) fruit large, depressed, rind only here and there adhering to the pulp, from which it is easily separable; its taste is not so agreeable as the other. An excellent marmalade is made from the peel; it is sold from 2*d.* to 8*d.* per dozen. The first variety being a long keeper, is adapted for shipping to long distances. It is the opinion of many that these varieties are due to the soil in which they are cultivated. Of *Citrus Medica*, the citron, we have two distinct varieties: (1) Fruit oblong, very large, and rind very thick, spongy internally, adhering closely to the pulp, which contains a small quantity of greenish and acidulous juice. It is made into confections; this variety is called *trong* by the Maltese, and is sold from 2*d.* to 6*d.* the dozen; (2) Fruit small, oblong, middle-sized, acid, called *citrat*, much esteemed for the agreeable perfume which it exhales. Price, from 2*d.* to 5*d.* the dozen.

The *Citrus Medica*, var. *Limonum*, is the common lemon, known in Malta under the name of *lumi kares* or *xcomp*. The fruit is ovate, oblong, terminated by a nipple-like protuberance, rind thin, adhering to the pulp, which is very acid. Of the 25 varieties described by Risso, the *aspermum*, seedless, the *vulgare*, ordinary lemon, the *racemosum*, the *tenue*, and the *oblongum*, are extensively cultivated. The sweet lemon has a queer taste; it differs from the lemon-shaped sweet lime, and from the lemon-shaped orange; it is sparingly cultivated under the name of *xcomp helu* or *spatafora*. Common lemons are sold from 2*d.* to 4*d.* per dozen, and in summer from 8*d.* to 2*s.*

The fruit of the lime seldom comes to maturity; it is middle sized and green, it is ovate and shining, the pulp green, with a few seeds or without; its juice, which exhales a pleasant perfume, is preferred by some to that of common lemons. It is not extensively cultivated; price from 1*d.* to 3*d.* the dozen.

It is a pity that the Bergamot (*Citrus Aurantium*, var. *Bergamia*) is not largely grown in Malta; of the variety *parva* of Risso a specimen

is cultivated in the botanic gardens of this island, yielding numerous middle-sized globose fruits, the rind of which is full of the fragrant oil peculiar to this species. This small tree, 5 feet high, produced in 1887 no less than 16 dozen fruits.

The shaddock (*Citrus decumana*) is very rare in our gardens, where it is merely cultivated as a curiosity. It does not grow high, and produces from one to four very large fruits, which are made into confections. The Maltese name is *xadocc*.

Sweet limes are plentiful ; they are known under the popular names of *lumi helu* and *lumi tal caruna*. Of this species (*Citrus Medica*, var. *Limetta*) two very distinct forms are here known : (*a*) Middle-sized, depressed shining fruit, with a large broad nipple-shaped, depressed protuberance, rind thickish, pulp as sweet as sugar ; generally eaten by children, and very seldom used for the table ; (*b*) fruit round, small, yellow saffron, rind thin with a small tapering, nipple-shaped protuberance. The pulp of this form is more agreeable than that of the other. Specimens are cultivated in gardens, and in courtyards of country houses. Price, 1*d*. to 3*d*. the dozen.

The amount of lemons exported in 1887 was 14,670 dozen, the greater part of which went to Barbary; and not fewer than 110,070 dozen oranges were also exported, the greater part of which went to the United Kingdom, to which country have also been exported six bags of bitter orange peel, weighing upwards of 6 cwt. A large number of young orange trees are annually exported to different countries, as India, America, &c.

Of the jujube tree, *Zizyphus vulgaris*, called *zinzli*, two distinct varieties are sparingly cultivated, the fruit of which is round or oblong, the size of a common olive, and of a queer taste. It is eaten chiefly by children.

It is to be regretted that the cultivation of the vine, *Vitis vinifera*, called in Malta *dielya*, which grows luxuriantly here, is greatly neglected. Its culture is more attended to in Gozo, where it forms an important and profitable branch of rural economy. In marly fields and in the fissures of the limestone strata it grows without demanding any particular care. Maltese grapes are superior to those produced in Gozo. We must admit that our grapes are not so exquisite as those imported from Sicily and Pantellaria. No less than 27 varieties are here cultivated. The white and black cornichon, having a finger shaped berry, is a showy good grape, called *bezzula* by the Maltese; the black corinth is sparingly cultivated, and is called *passulina ;* the royal muscadine, the white muscadine, the white sweet water grape, and other varieties, known under the names of *catalan*, *batuni di gallu*, *zakk el maghagia*, and *ananassa*, are in much repute.

The walls of fields should be covered by vines, and prizes awarded to promote this object. A tolerable sort of white and red wine is made in Gozo by people who do not understand the general principles of wine-making. Our ancestors were cleverer ; they made good wine, not less than 47,500 gallons (5,000 barrili) yearly. It would be desirable that a good portion of the 35,200 acres of uncultivated land in Malta should be turned into vineyards with the view of superseding the wretched drinks imported into this island from Sicily, the good wines of which country are either exported to continental Italy and France or consumed by the Sicilians themselves ; nor superior are the wines which reach us from the Greek islands. We firmly believe that under an able Italian or French director we could compete with Syracuse successfully both in the production of grapes and in the making of wines. Grapes from August to November are sold in the

markets from ½*d.* to 2*d.* per lb. Some varieties are good keepers, so much so, that in some gardens grapes enveloped in thin paper bags are kept up to February and sold at 1*s.* to 1*s.* 6*d.* per lb.

The family of the *Rosaceæ* furnishes our markets from April to June with strawberries (frauli), *Fragraria vesca.* The Chili strawberry is only grown as a curiosity. Strawberries are sold from 4*d.* to 10*d.* the lb.

The loquat or Japan medlar, *Eriobotrya japonica*, nespola or nespli of the Maltese, grows exceedingly well in Malta; its fruit is ripe in the months of May and June, and sold from 1*d.* to 2*d.* per lb. The loquat not being a long keeper is exported to a very limited extent; in 1887 only 20 barrels of it were exported, and those to Egypt.

Several varieties of the pear (*Pyrus communis*) are grown, such as (*a*) common bergamot (*bergamotta*) a sub-variety of which is ripe in November (*bergamotta ta sanguian*) and another in January (*bergamotta ta xitua*); (*b*) *Cuisse Madame* in July is sold in our markets under the name of *gambe di donna*; (*c*) *Muskat* sold in August; (*d*) *Beurré*, of which there are two distinct varieties called *pera butira*, ripe in August and September; (*e*) *Angelique*, rather rare: *pera angelica*; (*f*) the *Pera settembrina* or "Colmar de manne," known also as "Caillot rosat d'hiver" or Malta pear, is an abundant bearer; if not gathered mellow the fruit, which is rich, luscious, and high-flavoured, is a good keeper. They all thrive well, are remunerative, and sell from 4*d.* to 1*s.* per lb. They are seldom exported. We import a large quantity of pears, but only of a coarse quality, from Sicily, and a better sort from Marseilles.

The apple (*Pyrus malus*), toffieh, is largely grown in Gozo, sparingly in Malta. Apples are not exported but sold for local consumption. The principal varieties are: (*a*) *toffieh abiat* or *pumicell ta Malta*, fruit small, yellowish, of fair flavour; (*b*) *toffieh ta gian maltia*, fruit yellowish, streaked with red, of a rich aromatic flavour; (*c*) *toffieh ta billudia* of a moderate size, greenish with large deep red patches, seldom eaten raw; (*d*) *toffieh ta regina*, *toffieh comuni*, *toffieh ta ghaudex*, the Gozo apple, is a small very hardy tree producing large fruits, yellowish green splashed with red, flesh greenish white, fine grained, mildly sub-acid and aromatic. Season, September to November, price, 1*d.* to 2½*d.* per lb.

The peach and nectarine commence to ripen their fruit in July; the first, called in Maltese, *hawh* (*Amygdalus persica*), presents two varieties: (*a*) yellow, firm, flesh, *hawh isfar*; (*b*) fruit pale, greenish, or white and red, *hawh ta Malta*, "pêche de Malte," "Belle de Paris," or Malta peach. The Nectarine, called *anciprisc*, has two varieties: (*a*) fruit, middle sized, green-yellow, always red on the sunny side, or wholly dark red; (*b*) fruit, large, and white, *anciprisc francis*. The best of these these fruits, when picked, realize from 2*d.* to 3*d.* per lb. The quantity produced is hardly sufficient for local consumption, and consequently it is not exported. The most valuable sorts are the Malta peach and the white nectarine. Large plantation of these trees would be very valuable, as their fruit keeps well if properly gathered, and bears carriage.

The common quince, *Cydonia vulgaris*, called here *sfargel*, is sparingly cultivated in Malta, but in Gozo it is grown in quantity for the manufacture of jams and other confections. The fruit, which is never eaten raw, is sold from 2*d.* to 3*d.* the lb.

It is to be hoped that the bitter and sweet almond, which grow most luxuriantly and fruit freely in Malta, will be propagated all over the

island. The bitter almond (*Amygdalus communis*) is called *lewz morr*; the sweet almond, with a hard shell, is called *lewz helu*, and that with a tender shell is called *lewz milliesi*. The quantity produced is not sufficient for local consumption, even for making sweet tarts, nougat comfits, and the like. Formerly the almond was extensively grown. It requires but little care; it blossoms in January, and ripens its fruit in June.

The Apricot (*Prunus armeniaca*) is called *berqùq* or *berkuk*, of which four varieties are sent to market: (*a*) *berkuk ta Meju*, May apricot: fruit early, small, round, flesh pale yellow, high flavoured, kernel sweet; (*b*) *domaschina*, fruit tardy (end of June), oval, shining, middle-sized, firm, straw-coloured, flesh with very little flavour, kernel bitter; (*c*) *berkuk ta saif* or *lixandrina* (Roman apricot?) ripens at the end of June, kernel bitter. It is the most luscious of all varieties; (*d*) *berkuk ta l'imnaria*, the fruit is much like that of the May apricot, but it is tardier, and the kernel is bitter. Apricots are sold from 1*d.* to 2½*d.* per lb. A variety, having a very small exquisite fruit, now only cultivated in the Botanic Gardens, was formerly widely grown. It lives very long, and is an abundant bearer, called *berkuk ta santa Agata*.

Berkuk isuet, *abricö*, *berkuk francis*, and *berkuk ta l'Algier* are names given to the "*Abricot noire*" of the French. Its fruit is large, round, slightly compressed, dark purple all through, covered with a whitish bloom, gratefully subacid. It is becoming a popular dessert fruit, which ripens in August, and sells at from 1*d.* to 2½*d.* the lb.

The blackthorn (*Prunus spinosa*), called *prayn*, is grown to perpetuate varieties of peaches, nectarines, and plums, which are budded upon it.

Plums (*Prunus domestica*), called *ghanbakar*, succeed remarkably well; they are abundantly cultivated, especially in Gozo. Several varieties are grown: (*a*) the *pruna di frati*, that is monk's plum, sparingly cultivated, is a first rate dessert fruit, deep yellow, ripening at the end of August. It is pear-shaped, the flesh adhering to the stone; (*b*) greengages, *ghanbakar abiat*, are also plentiful; August, September, 1*d.* to 2½*d.* per lb.; the *pruna dei frati* from 2*d.* to 4*d.* per lb.

As far as we can learn of the true service tree (*Pyrus Sorbus*), known here as *zorba*, only a couple are cultivated, which produce pear-shaped fruits of a medium quality.

It is to be regretted that cherries are here cultivated only as a curiosity. The only sort we have seen grows vigorously, and is very productive; the fruit is large, deep purple, firm, and sweet, May to June.

The common Guava, *Psidium Guava*, grows freely in some gardens, and ripens occasionally a few berries of a pleasant taste.

Pomegranates, *Punica Granatum* (called *rummiena* in Malta), are almost exclusively grown for the market. They prefer moist soil, and thrive admirably in marly fields. No less than 12 varieties are here cultivated, differing the one from the other by the colour and size of the fruit, and of the seeds: (*a*) one of these varieties has been called *melitensis*, the fruit of which is red and round, slightly depressed, with a thick rind, and large red seeds covered with a very sweet agreeable pulp, which variety, from the size of the seeds, is called *smèn el baghal*, that is mule's teeth, and in Italy, "Melagrana di Malta"; (*b*) another variety is called *rummien ta San Guisepp*, the seeds of which are a little smaller than those of the "Melitensis"; (*c*) *rummien francis*, or

rummien ta Santa Rosa, or *ta bla ghadma*, or *rummien ta Santa Caterina*, has small very tender seeds, and very sweet pulp; it is much esteemed as a dessert fruit; *bullar* is the acid, and *rummien ta guida* the wild variety. Pomegranates are sold in the market from October to January from ½*d.* to 1*d.* per lb. Eighty cases of pomegranates were exported to England in the course of last year.

The Maltese water melon, *Citrullus vulgaris*, (phaira dollieh) is, as a rule, of medium quality. The pulp is either white, yellow, or red, sometimes granular, and very sugary. Its quality depends much upon the soil, locality, and the nature of the summer. It is a bad keeper, and sells from ¼*d.* to 1*d.* per lb.

Next to oranges the melon, *Cucumis melo*, is the richest of the fruits produced in Malta. The following are the varieties exposed for sale in markets: (*a.*) *bettieh ta L'Ahrax*, netted melon of Malta, "Melon muscat de Malte," fruit roundish or oblong, thickly grey, netted, pulp thick, pale orange or salmon coloured, high flavoured, scenting of musk, rather coarse to some palates, very abundant in summer, bad keeper, from ¼*d.* to 1*d.* per lb.; (*b.*) *bettieh tal curuna* or *ta xitua*, round, sometimes oval or sub-compressed, rind green or yellow, often streaked with either green or yellow, thin netted at the extremity, flesh green, often salmon coloured at the inner part, in which case it is generally sweet-scented, long keeper, price as above; (*c.*) *bettieh ta spagna*, "Melon de Malte à chaire blanche," fruit oblong, rind smooth, green or yellow, flesh white or green, and very sugary. It is held in great esteem, often weighs 10 lbs., and even more, the ordinary weight being from 3 to 6 lbs., very long keeper. We are at a loss to understand why it is not largely exported. During last year only 248 cases of melons were exported to England and Egypt. Every second year the seeds of this variety are imported from abroad, for melons easily degenerate. The cantaloupe of Paris and that of Valparaiso have been introduced into the Botanic Garden successfully, but they began to degenerate after the second year by losing their grooves.

The *Opuntia Ficus-Indica*, or prickly pear, (the *baytar ta l'Indya* of the Maltese) is extensively cultivated for its large edible fruit, which is white, *baytar francis;* yellow, *baytar isfar*, or purple *baytar ta demm.* There is a seedless variety *baytar ta bla zerrigha* which is very rare. The yellow fruit is more sugary than the others. Prickly pears are very abundant in summer, and are sold at a very low price, ¼*d.* per lb., and even less. Only Pantelleria can surpass Malta for the quality of prickly pears. There is a winter crop, which is scanty and not so saccharine as the summer produce, sold from 1*d.* to 2*d.* per lb. The plant is of a very easy culture: a branch of three or more joints (improperly called leaves) separated from the tree and allowed to lie several weeks to dry, and then put into any soil, even of the worst description, soon strikes root. It is productive after three years, and lives from 20 to 30 years, and even more if proper care is bestowed upon it. Trees manured every four years produce delicious fruit, and not so full of seeds as when no care is taken in their cultivation. Prickly pears are plentiful from July to November. The prickly pear plant is so well adapted to our climate that it should be more extensively grown, for both the "leaves" and the rind are given to sheep and oxen in the summer when green fodder is not obtainable.

The European olive, *Olea europœa* (zebbùg in Maltese, and zeitun in Arabic), is a native of the south of Europe, and grows wild in several parts of this island. The fruit of the wild plant, *O. Oleaster*, is small

and valueless. The cultivated variety, *sativa*, was in olden times extensively grown here; the names of Casals, Zebbug, and Zeitun, show how abundantly the olive was cultivated in Malta. During the Roman dominion, and subsequently in the 15th century, so much oil was drawn from the Maltese olives that Malta was called the oil-shipper of the Mediterranean. The pickled olives of this island were held in great esteem by epicures. It is really desirable that this useful and very profitable tree, which is now sparingly cultivated, should be again widely and generally grown. Though a slow grower it thrives, wonderfully in low and high localities, even in the most ungrateful soil and in the crevices of calcareous rocks. The sides of the ravines should all be covered by plantations of olives. We have reason to believe that the variety *præcox* of Risso, which produces a large, oblong, dark fruit is preferable to other varieties.

The fig tree, *Ficus Carica*, variously called by the Maltese *baitar ta San Guian*, *tìn*, and *parsott*, &c., grows most luxuriantly in Malta, and the fruit of all its numerous varieties, *sigiar tal halip*, come to perfection. Of first quality are those known under the name of *parsott* and *farchizzan*, which are pear-shaped or obovate, dark purple, covered with a whitish bloom. The variety *farchizzan* is considered by Risso as special to this country. The fruit of this is of a deep violet colour and reticulated. Of medium quality is the *bzengul*, oblong, sometimes three inches long (in Gozo). Some of the green figs (*tin abiat*) are indeed very sweet, covered when gathered with a thin white bloom. The variety called *tin gludi* (October) is coarse. The so-called *zondadari* figs having been introduced, as it is supposed, by the Grand Master Zondadari from Siena, are round, covered with a whitish bloom, internally red, and of a good flavour. All these varieties ripen in August; they are sold in large quantities in markets and by country-women in the town streets at ½*d.* or less per pound, the choicest varieties being sold at 1*d.* per lb. There is an early variety called *baitar ta San Guian*, which ripens in June, the fruit of which is large, purple or green; the quality depends much upon the nature of the soil in which the tree is cultivated. The fruit coming from the districts of Zabbar and Mellicha, especially those coming from the latter, are most esteemed, whilst that from the district of Città Vecchia is less thought of. St. John's fig-tree produces a second crop of an inferior sort in August and September. With the exception of the St. John's figs, all varieties are dried by the country people for their own use, and for village shops.

The white mulberry, *Morus alba* (cewsi, chewsi, or chawsli), was widely cultivated when its leaves were wanted for the silkworm, the rearing of which is now entirely abandoned We have two distinct varieties: (*a*) *meridionalis* of Risso, with a purplish, sweet fruit; and (*b*) *vulgaris*, with a white, very saccharine fruit. The fruit of both varieties is eaten only by children and the poorer classes. It is a splendid food for fowls. This tree might with advantage be occasionally substituted for the *Phytolacca dioica* which, as yet, has been almost the only tree planted along the sides of our public roads.*

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* *Phytolacca* (Pircunia) *dioica*, a member of the *Phytolaccaceæ* or Poke-weed Order, called Bella Sombra, is an umbrageous tree of South America introduced to the south of Europe, where it is planted as a shelter in public promenades. Other species of the genus Phytolacca are herbaceous plants, common in most tropical countries.

The black mulberry, *Morus nigra* (tùt in Maltese), has a large dark purple acidulous fruit, which ripens in summer and soon decays; it is consequently eaten within a few hours of its being gathered. The fruit is made into a preserve, which is very pleasant and cooling.

The walnut, *Juglans regia* (geus in Maltese), thrives here wonderfully, as is evident from the few trees cultivated in some gardens. Its fruit attains the same degree of perfection as in Sicily. It is desirable that this tree should be cultivated at least for local consumption.

The stone-pine, *Pinus Pinea* (*prinioli*), grows vigorously in some gardens, and produces abundant cones containing the edible seeds known as *Pignons doux.*

Although palms grow here luxuriantly, and the date palm especially, nevertheless dates seldom, if ever, come to perfect maturity. Protected from winds and placed in rich soil, and often watered, plantains (*Musa sapientum*) grow here, and fruit remarkably well.

The banana is especially cultivated in courtyards, where it produces rich bunches of first-rate fruit. The Abyssinian banana (*Musa Ensete*) and a decorative sort known as *Musa ornata* are thriving wonderfully in the Botanic Garden, but as yet have not borne fruit.

Of the *Aroideæ* the *Tornelia fragrans*, also known as *Monstera deliciosa,* was introduced to the Botanic Gardens about three years ago. The fruit in a perfect state was much admired, both for its beautiful perfume and the delicate taste, and was by many considered superior to the pine-apple. Though a slow grower the plant requires but little cultivation, and is easily propagated by cuttings. As far as we can learn, it has not fruited in Italy, where it was introduced some 10 years back by Professor Pasquala. It is abundantly cultivated in Mexico, where it is highly esteemed, and realises a good price. Being a bad keeper it cannot be easily exported.

With a view of completing our report, we annex herewith a table, showing the kind, quantity, value, and derivation of fruits imported into this island in the year 1886.

Before concluding, we may perhaps be allowed to submit another proposal. Its utility is so apparent that we will not dwell on its merits, which we consider are alone sufficient to commend themselves to those on whom its adoption may depend. It would be of great advantage to institute an experimental garden, where productive trees and shrubs could be tested in their climatic adaptations, and their economic value accurately determined.

The Botanic Garden, having so small an area and teeming with plants, is insufficient for this purpose, nor is the locality adapted for such experiments. The institution of such a garden free to the public would be a most valuable source of information and instruction. This, we think, is a decisive step to be taken at once. It has been done in all civilized countries where new methods of horticulture and new plantations have been introduced.

Gavino Gulia, M.D.,
Director of the Botanic Garden, Malta.

Fruits imported into Malta during the Year 1886.

Fruits.	Countries whence imported.	Quantity.	Value.
		Cantars.	£ s. d.
Almonds	Italy, Barbary	399·14	480 0 0
Do. peeled	Italy	128·75	764 5 0
Apricots	Barbary	93·70	60 6 0
Cherries	Italy	243·	182 5 0
Chestnuts	France, Italy	3,125·60	287 12 0
Do. peeled	Italy	336·	252 0 0
Do. baked	Italy	350·	180 0 0
Currants	United Kingdom, Turkey, Greece	583·05	1,041 3 0
Dates	France, Tunis, Barbary	6,114·17	12,207 18 0
Figs, dried	Italy, Turkey, Greece, Egypt	1,785·79	2,198 11 6
Fruit	Italy, Turkey, Barbary	2,238·60	914 15 0
Do. dried	United Kingdom	12·	7 4 0
Do. preserved	Italy, Barbary	132·68	247 7 6
Do. candied	France	·06	0 6 0
Grapes	Turkey	145·	50 14 6
Ground Nuts	France	246·85	370 5 6
Melons	Barbary	4·02	1 0 0
Mandarins	Italy	·50	0 10 0
Nuts	France, Italy, Turkey, Tunis, Barbary, Greece.	3,322·10	2,496 4 0
Oranges	Italy, Barbary	1,380·20	1,034 12 6
Apples	Barbary	289·20	80 8 0
Pomegranates	Italy	·70	0 5 0
Pears	Italy	1,417·45	708 10 0
Prunes		·80	0 12 0
Pistachio Nuts	Egypt	21·35	138 5 0
Raisins	Italy, Barbary, Egypt	538·80	806 12 0
Walnuts	Italy	790·60	108 13 0
Tomatoes	Italy	1,462·75	438 17 0
		25,162·86	25,059 1 6

One Cantar is equal to 175 lbs.

Cyprus.

The following interesting Report on the fruits of Cyprus, forwarded by the Government, has been prepared by Mr. A. F. G. Law, Principal Forest Officer :—

The chief fruits grown in Cyprus are :—

Name.	When in Season.	Local Price.
Grapes	July to November	½ to 2 piastres per oke.
Caroubs	Ripen in August	11*s.* to 16*s.* per cantar.
Olives	October to December	3 to 6 piastres per oke.
Oranges	December to May	2*s.* to 3*s.* per 100.
Bitter do.	Do.	4½ to 6 piastres per 100.
Mandarin do.	December to February	2*s.* to 3*s.* per 100.
Lemons	September to May	2*s.* to 3*s.* per 100.
do. Sweet	December to March	2*s.* to 3*s.* per 100.
Citrons	January to February	Sales so rare that there is no fixed market price.
Figs	August to October	½ to 2 piastres per oke.
Pomegranates	August to January	1 to 2 piastres per oke.
Apricots	June and July	½ to 1½ piastres per oke.
Peaches	August to October	2 to 4 piastres per oke.
Plums	Do.	½ to 2 piastres per oke.
Almonds	September to October	3 to 5 piastres per oke, or 13*l.* to 22*l.* per ton.
Walnuts	Do.	1 to 3 piastres per 100.
Hazel nuts	July to September	2 to 4 piastres per oke.
Cherries	July and August	1 to 3 piastres per oke.
Apples	September to December	3 to 5 piastres per oke.
Pears	September to January	2 to 4 piastres per oke.
Quinces	October to December	3 to 5 piastres per oke.
Bananas	August to November	Barely sold, no sale price can be given.
Melons	June to October	1 to 3 piastres per oke.
Water melons	Do.	½ to 2 piastres per oke.
Prickly pears	August to November	3 piastres per 100.
Dates	July to September	2 to 5 piastres per oke.

The oke equals 2·7 English lbs.

The Aleppo cantar, the one referred to in this report, equals 180 okes.

Nine of the piastres mentioned equal one shilling.

The only fruits of which there is any export to speak of are caroubs, oranges, lemons, pomegranates, and grapes in the form of raisins.

Grapes are produced in most parts of the Island. The grapes from the hill districts make the best wine. The removal of the tithe on grapes in 1884, and the spread of Phylloxera in Europe have given great impetus to vine planting for the purpose of making wine. Fresh grapes are exported in small quantities to Alexandria and Port Said.

Raisins are made in most of the hill villages, and are principally exported to France. In the year 1885–86 the export was 440,206 okes, value 4,947*l.*, and in 1886–87, 599,880 okes, value 7,011*l.* Raisins of a superior quality are imported in small quantities from Smyrna.

Caroubs (*Ceratonia siliqua*) are chiefly exported to England, France, and Italy, although in the year 1885–86 the largest export was to Spain. In 1885–86 the export was 96,233 cantars, value 74,562*l.*, and in 1886–87 the export was 124,463 cantars, value 102,723*l.*

Olives grow in most parts of the Island; and on the waste lands in the hill districts the wild olive is one of the commonest trees; it bears

well being transplanted if the operation is carried out with care. The Cypriots do transplant large numbers of wild olive trees from the hills to their villages, but in many cases a considerable per-centage of the trees die, because the work is not carried out with proper care and attention. The black olives are as a rule of good quality.

A sample of Cyprus oil sent to the Colonial and Indian Exhibition was reported on by Professor Leopold Field, F.R.S.E., F.C.S., in the following terms:—"Cyprus also exhibited some excellent though "unrefined olive oil, and doubtless will prove in time to come a formid-"able competitor of the Italians in a line now almost monopolized by "them." If Cyprus oil commanded a high price in the European market, olive cultivation would be greatly extended, affording a very profitable occupation to the agriculturist.

Oranges will grow in almost all the villages of the plains, but the cultivation of them is much neglected; they are chiefly grown at Famagusta, Nikosia, and Lefka. There is a small export trade with Alexandria and Port Said, which might perhaps be extended to England if there was any direct means of communication, although the ordinary orange of the country is not of the best quality.

Mandarin oranges are grown in small quantities and are of good quality. They graft well on to the bitter orange stock.

Lemons are much grown, but there is a large local consumption, the lemon being commonly used instead of vinegar. The quality of the fruit is good. Green lemons come into the market about September, and last on until May. In 1885–86, 2,263,331 oranges and lemons were exported, value 508*l*. In 1886–87, 3,343,638 oranges and lemons were exported, value 1,079*l*.

Citrons.—Few are grown, and are mostly used for making preserves for local consumption.

Figs are extensively grown in most parts of the Island, but not more than sufficient for local consumption are produced. They are not of very fine quality. Dry figs are imported from Smyrna, Beyrout and Tripoli.

Pomegranates are principally grown at Famagusta. A small export trade is carried on with Port Said and Alexandria.

Apricots are produced in large quantities; the trees are not usually grafted, but are much improved by grafting. Dried apricots and apricot pastes are imported in considerable quantities from Beyrout.

Peaches are only grown in small quantities; the trees are sometimes grafted, which very much improves the flavour of the fruit.

Plums are generally of an inferior quality and are chiefly used for preserving. Plums are also imported in small quantities from Kilindria in Asia Minor.

Almonds give about the best return of any fruit crop in Cyprus. Great impetus has been given to the planting of these trees of late years. The tree requires little or no attention, although if it can be watered so much the better. In the plains it produces large crops every other year. The grower acquires a great advantage by being able to wait for a good market, and by there being at present no tithe to be paid on the fruit. The quality as a rule is not of the best, the greater part being a small hard-shelled almond, but lately seed has been introduced from Chios of a soft-shelled kind.

In the hill districts the crops generally suffer from late frosts. The Chios almonds are much esteemed in the East and many people, who possess some special knowledge in the matter, believe that almonds might be very largely grown in Cyprus with great profit. Almonds are imported in small quantities from Kilindria and Mersina.

Walnuts grow well in the hill districts where there is running water and the climate is not too hot. They are exceedingly fine trees and the fruit is fairly good.

Hazel nuts are grown largely in the district known as Pitzillia; they are of very fine quality and a paying crop, but in Cyprus they require much care to do well. The ground should be broken up round the roots every spring and the trees irrigated until the crop is gathered.

Cherries grow plentifully in the Marathassa valley at a height of more than 4,000 feet above the sea-level, but the fruit is not of good quality.

Apples are only grown in any quantity in the village of Prodromo, 4,500 feet above the sea-level; they are of inferior quality and only fit for cooking.

Pears are only grown in any quantity at present about 3,500 feet above sea-level. The quality is not good. Fairly good pears can however be grown in the plains.

Quinces are grown in fair numbers and are of good quality.

Bananas are cultivated in the towns in private gardens, but not to any great extent; they seldom come into the market. The Paplios bananas are of fine quality and very large.

Melons are grown largely in most gardens; the quality is fairly good but might probably be improved by the introduction of new seed.

Water Melons grow well and attain an immense size.

Prickly Pears grow abundantly in the low country; they furnish useful fences. The fruit is good. The supply is equal to the local demand. There is no export.

Dates are only grown in a few places, and are generally of an inferior quality. The dates consumed in the island are mostly imported.

Besides the above fruits, *medlars* are grown, but are very small; they are all consumed locally, and the quantity is insignificant.

Strawberries will grow if properly attended to; quite an insignificant number is grown in the island.

Capers grow wild in the hills. They are pickled in a rough way by the inhabitants. It seems likely that by cultivation and proper attention an export trade might be established.

All the fruits of Cyprus are capable of being produced in much larger quantities than at present, and there is also no doubt that the quality of most of the fruit might be greatly improved; but this will not be done until the subject of fruit-growing is much better understood than it generally is at present. The Cypriots make most excellent jam and preserved fruits, but little or none of these come into the market; households, as a rule, making only for themselves. I think it would be well worth while for someone, who understands the business, to consider whether a manufactory of marmalade and jam, especially apricot jam, could not be worked here with profit.

If a fruit trade is to be developed, which I believe to be quite possible, it would be necessary to provide better means of communication within the island, and better, quicker, and, above all, more regular communication with foreign countries.

A. F. G. Law, Principal Forest Officer.

Ceylon.

The following report on the fruits of Ceylon has been prepared by Dr. Henry Trimen, F.R.S., Director of the Royal Botanic Gardens, Peradeniya :—

A list of the fruits grown in Ceylon would include nearly the whole of those found in the tropics, for though the really native fruits of any value are very few—the Jambu, the Plantain and the Goraka (*Gracinia Cambogia*) being the chief—there has been introduced at various times nearly every fruit of importance suitable to the climate. And, owing to the remarkable differences in the climatic conditions of various parts of Ceylon, we are able here to cultivate a greater variety than would be expected in so small an area. Thus, in the humid districts of the South-west, most Malayan fruits come to perfection, the Durian, Mangosteen, Rambutan (*Nephelium lappaceum*), Bread fruit, Nam Nam (*Cynometra cauliflora*), Java Almond (*Canarium commune*), Santol (*Sandoricum indicum*), Langsat (*Lansium domesticum*), &c., as well as other tropical sorts such as the Sapodilla, the Custard-apple (*Anona squamosa*), and the Cochin-Goraka (*Garcinia xanthochymus*). In the low country generally the common fruits of tropical countries are to be found: the Mango, Papaw, Guava, Pomegranate, Pine-apple, Tamarind, Cashew nut, Avocado Pear, Pumelo, Sour Sop (*Anona muricata*), Bullock's Heart (*Anona reticulata*), Lime (*Citrus Medica* var. *acida*), Lovi-lovi (*Flacourtia inermis*), Kottamba (*Terminalia Catappa*), Star Apple (*Chrysophyllum Cainito*), Bilimbi (*Averrhoa bilimbi*), Granadilla (*Passiflora quadrangularis*), and many others. In many places, at a slight elevation and more moderate rainfall, a few fruits of sub-tropical countries can be grown, as the litchi, the loquat, and the wampi, whilst in the hot regions of the North and East, gourds of various kinds are largely grown, and in a few places on the coast even grapes are successfully ripened under a system of artificial wintering. I must also mention the ubiquitous orange, which, though not a tropical fruit naturally, succeeds so well in tropical countries, and is grown throughout Ceylon under several varieties, of which the true thin-skinned "Mandarin" is the best. The rind of all our oranges retains a dark green colour when fully ripe and fit for eating. In the hills, especially those of the drier districts in Uva, some fruits of still more temperate character do well, especially peaches, figs, and less successfully plums, apples, and strawberries.

It must be admitted that many of these fruits are grown in very small quantities, and that very little pains have been taken to cultivate or improve fruit generally. In the village gardens the sorts chiefly seen are plantains, limes, bullock's-hearts and pine-apples, but they are grown carelessly and without method. It must, however, be remembered that the jack is in very general cultivation, and however distasteful to Europeans, is more largely consumed than any other fruit by the poorer natives. The habits of the people are not suited to any careful fruit-cultivation; pilfering from one another's gardens is universal, and it is only by constant watch that any fruit can be kept on the tree till ripe. In the neighbourhood of the ports of Colombo and Galle, however, there has taken place a considerably increased production of such fruit as can be sold to the dubashes and bumboat-men who supply the ships. It appears that this trade has become one of considerable magnitude, but no record of its amount is obtainable. It is certain that the quality is usually very inferior, and the prices paid to the native growers extremely low. The trade needs encouragement and regulation, and its

details are well worthy the careful attention of the agents of the great mail steam companies at Colombo.

With the exception of this supply to the ships there is practically *no* export of fresh fruit from Ceylon.

The Colony is indeed an importer of fruit instead of an exporter, but those imported are chiefly for the European residents. I do not know if it be true of the eastern tropics generally, but in Ceylon there is among English people no great liking for tropical fruits, and few people consider them in any way comparable with temperate and sub-tropical ones. Hence there is a large import of the excellent tinned and bottled fruits of America and England; but the quantity cannot be ascertained, as nearly the whole is entered at the Customs under oilman-stores generally. Fresh apples and pears are also imported from Australia to a slight extent; in the year 1886–7 to the value of Rs. 692/25.

Whether this low opinion of tropical fruit would be general among English people I cannot say, but it would certainly be largely entertained, and for my part I much doubt if, after satisfying the curiosity which most people feel on the subject, there would be much further demand at home for most kinds. Pine-apples and plantains (bananas of West Indies) may be excepted, being already well known and generally liked. The question of the export of fresh fruit, however, is not one which possesses any practical interest for Ceylon. We are too distant from home to endeavour to send thither fresh fruit as a commercial speculation; Australia with its fine and varied climate can grow all the fruits it needs, and we have no other market within reach.

As regards preserved fruit our exports are trifling. The small quantities sent are all without doubt presents from residents to friends at home, and have no commercial significance. The actual values have been, in 1882, Rs. 280; in 1883, Rs. 102; in 1884, Rs. 239; in 1885, Rs. 296; in 1886, Rs. 105.

There is no information as to kind of fruit preserved, but in all probability they were samples of the jams and jellies commonly made here from such acid fruits as the Lovi-lovi (*Flacourtia inermis*), Bilimbi (*Averrhoa bilimbi*), Carambola (*A. Carambola*), or Nelli (*Phyllanthus emblica*). These are palatable enough and are generally liked, but can scarcely compare with the excellent jams made in England. Of these latter the import into Ceylon must be very large, but as in the case of bottled fruit, all are entered simply as oilman-stores, and the quantity cannot be ascertained.

I cannot but think that an export trade might, however, be set on foot in preserved plantains and pine-apples. These can be readily and very cheaply grown in any quantity and of fine quality. Plantains, simply sliced and dried in the sun like dates, are very tasty and nutritious, and would, I believe, be likely to sell at home if cheap. A trade in preserved pine-apples has sprung up at Singapore and might well be also attempted here in Ceylon.

HENRY TRIMEN.

Straits Settlements.

The following are the principal fruits grown in the Straits Settlements:—

A.

Plantain	*Musa sapientum.*
Pine-apple	*Ananas sativa.*
Durian	*Durio zibethinus.*
Mangosteen	*Garcinia Mangostana.*

B.

Rambutan	*Nephelium lappaceum.*
Champedak	*Artocarpus polyphema.*
Jack	„ *integrifolia.*
Rambeh	*Pierardia dulcis.*
Orange	*Citrus Aurantium.*
Pumelo	„ *decumana.*
Lime	„ *Medica* var. *acida.*
Chiku	*Achras Sapota.*
Soursop	*Anona muricata.*
Pulassan	*Nephelium mutabile.*
Jambu	*Eugenia Jambos.*
Duku	*Lansium domesticum.*
Mango	*Mangifera indica.*
Custard-apple	*Anona squamosa.*
Bullock's Heart	„ *reticulata.*
Papaya	*Carica Papaya.*
Melon	*Cucumis Melo.*
Water-melon	*Citrullus vulgaris.*
Granadilla	*Passiflora quadrangularis.*

C.

Bingay	*Mangifera cæsia.*
Guava	*Psidium Guava.*
Rokum	*Flacourtia inermis.*
Sintol	*Sandoricum indicum.*
Bachang	*Mangifera fœtida.*
Blimbing	*Averrhoa bilimbi.*
Carambola	„ *Carambola.*

The four fruits in Class A. are certainly the most important grown in the colony. The fruits in Class C., and many others, are eaten only by the natives. It is difficult to arrange fruits in order of importance; the arrangement here must be considered as approximate only.

There are two fruit seasons, July and August, and December and January; the July season being as a rule much the most important; but the quantity of fruit at each of the seasons depends very much on the wetness or dryness of the weather, which varies considerably from year to year. In 1887 (an unusually wet year) there was no fruit in the July season; orchards which usually let for $600 a year being worth nothing. In the December season of the same year the supply was much larger than usual. Some fruits, *e.g.*, plantain, pine-apple, are procurable nearly all the year round, though more plentiful in the regular fruit seasons. In Sarawak (Borneo) the fruit seasons are at the same times, but the December season is the more important. It is difficult to say what quantities are available for export and what the local prices are.

In the height of a good fruit season the supply is so plentiful that large quantities of fruit are sold for almost nothing, or even destroyed. Some months ago pine-apples were very plentiful: M. Bastiani, who does a large business in preserved fruits, offered to buy a large quantity brought from neighbouring islands at ¾ cent each; they had never previously been sold for less than one cent apiece, and, sooner than go below this price, the Chinese importers threw them all into the sea. Durians, early or late in the season, are worth from 25 to 50 cents each; when plentiful they sell for five or six. The following prices may be considered roughly to represent the price of fruit when plentiful:—Plantains, per bundle of 30 to 40, 7 to 10 cents; pine-apples, per hundred, $1½ to $2; durians, each, 10 to 15 cents; mangosteens, per hundred, 10 to 15 cents.

Fruits exported in a fresh state:—(1) mangosteens, (2) pine-apples, (3) durians, (4) rambutans, and perhaps some others in small quantities. No record is kept. There is a large trade in fresh fruit between Singapore, Penang, Malacca, and the States of the Malay Peninsula. Considerable quantities also go to Sumatra, China, Ceylon, India. The value of fresh fruit exported, according to Government returns, is over $30,000 yearly, but this includes the local trade.

Fruits exported in a preserved state:—Pine-apples and mangosteens, the former in considerable quantities to Europe, China, India, &c. The annual value of the preserved fruit exported exceeds $100,000. Messrs. Bastiani, the chief preservers of fruit here, give me the following particulars of the quantities they exported during 1887:—

Pine-apples, 340,000 tins. About 200,000 to England; some to Siberia, North America, Australia; a few to South America and Japan.

Mangosteens, 20,000 tins. Chiefly to Europeans homeward-bound.

Guava jelly, pine-apple jam, bread-fruit, 15,000 tins. Chiefly to Europeans homeward-bound.

The supply of fruit is now sufficient for local wants. All the important fruits would be produced in much larger quantities if there were a market for them. With a railway to India or China, or ships with ice-houses, fruit-growing would become an important industry.

Fresh fruits imported:—

1. Plantains in large quantities, chiefly from the islands of the Dutch Archipelago. The number of plantains grown in the Colony is probably not one-tenth part of the number consumed. The plantain, mangosteen, pumelo, Chinese date, &c. are picked before ripe, and ripen on their way from place of production to place of consumption. The quality, however, of fruit ripened this way is inferior.
2. Oranges in large quantities from China, from October to February. The local orange, obtainable all the year round, are very inferior to those imported from China.
3. Pumeloes and mangoes in considerable quantities from Siam, Java, &c. These are among the best fruits obtainable in the Colony. Those grown locally are very inferior.
4. Chinese date (*Diospyros kaki*) in considerable quantities from China, from October to January.
5. Apples, pears, grapes, peaches, in small quantities and of inferior quality from China.

The total value of fresh fruit imported in 1886 was $183,000, of which $85,000 worth came from China.

Preserved fruits imported:—

1. Dried dates in large quantities from the Persian Gulf.

2. Litchee; a small quantity of litchees (*Nephelium Litchi*) from China.
3. Apples, peaches, plums, &c. from Europe. There is a considerable demand for these among the Europeans and wealthier natives.

The fruits of this Colony are inferior as compared with tropical fruits generally; this is due chiefly to the poorness of the soil. But there are two fruits which would grow to perfection—the mangosteen and the durian—and which are not obtainable from other parts of the world. If there were possibilities of exporting these fruits fresh to Europe, the mangosteen certainly, and possibly the durian, would find a ready sale. They would be available in considerable quantities in January, February, March, when other fruits are scarce, and the trade in fresh fruit between this Colony and Europe would be of commercial importance. It must be remembered too that money spent now on fruit-growing is not well invested. If there were a ready sale for fresh fruit, capital would at once be devoted to fruit-growing, and it is probable that many of the fruits now grown would be much improved in quality.

St. Helena.

The following information has been received respecting the fruits of the island of St. Helena in a despatch from Mr. W. Grey Wilson, administering the Government:—

St. Helena, January 23, 1888.

I have the honour to acknowledge the receipt of your circular of 30th November last, calling attention to the portion of Mr. Stanhope's circular of the 17th November 1886, respecting colonial fruits, which has remained unanswered.

The chief fruits of the island in order of importance are: Guava, peach, banana, loquat, pear, fig.

No island fruits are grown in sufficient quantities for export, and of late years the supply has hardly equalled the local demand. This falling off in the fruit supply is due to the terrible ravages of a fly which fills the fruit with maggots.

The island imports some grapes and oranges from the Cape; but the rates of freight charged by the mail steamers are so extortionate that the amount is very small.

The cultivation of grapes has entirely ceased, and none are now grown on the island, blight having destroyed all the trees.

W. Grey Wilson.